

## CLAIMS:

1. A transmission system for transmitting a multicarrier signal from a transmitter (10) to a receiver (20), the multicarrier signal comprising a plurality of subcarriers, the receiver (20) comprising a channel estimator (28) for estimating amplitudes of the subcarriers and for estimating time derivatives of the amplitudes, the receiver (20) further comprising an equalizer (24) for canceling intercarrier interference included in the received multicarrier signal in dependence on the estimated amplitudes and derivatives (29), wherein the receiver (20) comprises a multiplication by  $N \times N$  leakage matrix  $\Xi$ , and wherein the multiplication is implemented as a sequence of an  $N$ -point IFFT (82),  $N$  pointwise multiplications (84) and an  $N$ -point FFT (86).

2. The transmission system according to claim 1, wherein the receiver (20) is a decision feedback receiver and wherein the channel estimator (28) comprises a smoothing filter (76) for smoothing the estimated amplitudes and/or derivatives.

3. The transmission system according to claim 1 or 2, wherein the FFT (86) is further arranged for demodulating the received multicarrier signal.

4. The transmission system according to any one of the preceding claims, wherein the multicarrier signal is an OFDM signal.

5. The transmission system according to any one of the claims 1 to 3, wherein the multicarrier signal is a MC-CDMA signal.

6. A receiver (20) for receiving a multicarrier signal from a transmitter (10), the multicarrier signal comprising a plurality of subcarriers, the receiver (20) comprising a channel estimator (28) for estimating amplitudes of the subcarriers and for estimating time derivatives of the amplitudes, the receiver (20) further comprising an equalizer (24) for canceling intercarrier interference included in the received multicarrier signal in dependence on the estimated amplitudes and derivatives (29), wherein the receiver (20) comprises a

multiplication by  $N \times N$  leakage matrix  $\Xi$ , and wherein the multiplication is implemented as a sequence of an  $N$ -point IFFT (82),  $N$  pointwise multiplications (84) and an  $N$ -point FFT (86).

- 5     7.             The receiver (20) according to claim 6, wherein the receiver (20) is a decision feedback receiver and wherein the channel estimator (28) comprises a smoothing filter (76) for smoothing the estimated amplitudes and/or derivatives.
8.             The receiver (20) according to claim 6 or 7, wherein the FFT (86) is further
- 10     arranged for demodulating the received multicarrier signal.
9.             The receiver (20) according to any one of the claims 6 to 8, wherein the multicarrier signal is an OFDM signal.
- 15     10.            The receiver (20) according to any one of the claims 6 to 8, wherein the multicarrier signal is a MC-CDMA signal.